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ABSTRACT

In this study an interactive conceptual model was utilized in an attempt to examine variables which contribute to, and influence, the development of Post Traumatic Stress Disorder (PTSD) in battered women. This model considers the individual's response to trauma as being the product of the interaction between factors related to the characteristics of the individual prior to the trauma, the nature and severity of the trauma itself, and factors related to the post-trauma environment. This study examined pre-trauma victim characteristics, individual cognitive styles, and violence related variables. Subjects (N=106) were women who were treated at an outpatient mental health center and who had experienced violence in their current relationship. Subjects completed the Attribution Questionnaire, the Appraisal of Violence Scale, the Structured Intake Interview, and the Derogatis Symptom Checklist 90-Revised. The results indicated that 60% of the subjects were PTSD-positive. These results appear to support the applicability of a PTSD diagnosis for battered women and suggests that these symptoms may be considered a central component of the emotional aftermath experienced subsequent to physical and/or sexual battering, rather than conceptualized as a rare exception to the rule. (ABL)

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FACTORS INFLUENCING THE DEVELOPMENT OF PTSD IN BATTERED WOMEN

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For almost 70 years theorists and mental health practioners have been interested in post-traumatic stress disorders (PTSD). In 1941, Kardiner was the first to describe the range of clinical symptomology which resulted from a traumatic experience. This was the first description of the full syndrome known today as PTSD.

More recently, both the DSM-III (American Psychiatric Association, 1980) and the DSM-III-R (American Psychiatric Association, 1987), depict a conceptualization of PTSD which emphasizes the role of the traumatic event itself, as a prominent etiological factor in the development of PTSD. The clinical presentation of the symptoms of PTSD can be described as consisting of phases of reliving and denial of the traumatic event along with periods of intrusive and numbing responses (Figley, 1985; Vander Kolk, 1987).

The diagnostic criteria of the DSM III-R (American Psychiatric Association, 1987) defines Post-traumatic Stress Disorder (PTSD) as consisting of (1) The experiencing of an event that is outside of the range of usual human experience and would be markedly distressing tc almost anyone (2) the re-experiencing of the trauma in the form of nightmares, intrusive recollections, and fears that the trauma will recur (3) an avoidance of stimuli associated with the trauma or a numbing of responsiveness and reduced involvement and withdrawal from others, and (4) a collection of symptoms evidencing increased arousal, including an exaggerated startle response, outbursts of anger/increased irritability, hyperalertness, sleep disturbance, and difficulty concentrating (American Psychiatric Association, 1987).

Conceptual Models Describing the Development of PTSD

Various conceptual models exist describing the development of PTSD. One conceptual model focuses on the role of an individual's cognitions about the traumatic event and the degree of resulting autonomic nervous system (ANS) arousal (Scrignar, 1984). According to this viewpoint, the developmenmt of PTSD is determined by the impact of the trauma on the individual's ANS. It is not the objective level of severity of the trauma which determines the extent of the stress response, but rather, the individual's subjective perception of the degree of danger associated with the event and the subsequent ANS activity (Scrignar, 1984). The individual's perception of the potential lethality of the traumatic event may proceed, occur concurrently, or occur at some time following the traumatic event. Furthermore, within this context, an environmental event can be understood as having the potential to precipitate PTSD whether it produces physical injury or not (Scrignar, 1984).

A biological model for understanding the development of PTSD has been proposed by Van der Kolk, Greenburg, Boyd, and Krystal (1985) which hypothesizes that under conditions of unavoidable trauma, biochemical changes occur within the individual which concordantly result in the development of PTSD symptomology. The primary emphasis in this theoretical formulation is on the role of neurochemical changes which contribute to the appearance of PTSD symptoms.

Another conceptual model attempting to explain the processes involved in PTSD integrates both the classical psychodynamic notion of repetition compulsion, with cognitive theory formulations emphasizing an information processing model as related to the traumatic event (Horowitz, 1976, 1979). This model proposes an explanation for the alternating pattern of the intrusive and numbing symptomology observed in PTSD. Within this context, aspects of the traumatic event must be integrated into the existing self structure of the individual. The symptoms of the PTSD, such as intrusive imagery and the resulting anxiety, continue to be experienced by the individual until this task of integration is completed successfully. The numbing cycle of the disorder is conceptualized as a defensive reaction against the impinging intrusive imagery and related affect. (Horowitz, 1979). According to this model, as the process of working through and incorporating this new external information into the pre-existing internal model is accomplished, there is an adjustment of the individual's view of the world and of oneself. To the extent that this is accomplished, there is no longer the need to block out an awareness of this information from one's personality, and as a result, the individual will experience a decline in the intrusive and numbing symptomolgy of PTSD (Horowitz, 1979).

A fourth conceptual model proposes a person x situation model of PTSD and postulates that there is a predictable relationship between the individual's personality and situational variables specific to the the traumatic event (Wilson, Smith, & Johnson, 1985). An individual's adaptation, or degree of

symptomology following the trauma, is considered to be influenced by three factors. The first factor involves aspects of the individual's premorbid personality. It is hypothesized that an individual with no premorbid personality pathology is likely to experience less symptomolgy following the traumatic event then an individual with premorbid psychopathology. The second factor considers the interaction of intrapersonal and situational variables. This factors considers specific moral values and belief systems that the individual brings into the event, and considers the role of this factor in the resulting beliefs concerning self-blame or feelings of guilt related to their behavior during the traumatic experience. The individual's belief system may be a reflection of prior experiences and values present within the family and social environment (Kerr & Bowen, 1988; Lazarus, Averill,& Opton, 1974). The third factor considers the nature of the traumatic event itself as being capable of resulting in specific symptomolgy as a result of certain characteristics pertaining to the event (Wilson et al., 1985). These include (a) the degree of life threat experienced, (b) the degree of bereavement resulting from the traumatic event, (c) the speed of onset of the traumatic event, (d) the duration of the trauma, (e) the degree of displacement in home community resulting from the traumatic event, (f) the potential for recurrence of the traumatic event, (g) the degree of exposure to death, dying, and destruction, (h) the degree of moral conflict inherent in the situation, (i) the role of the person in the trauma, and (j) the proportion of community affected by the trauma (Gleser, Green,& Winget, 1981).

PTSD In Various Clinical Populations

The presence of at least one or more PTSD symptoms has been found in 60% of the Vietnam veterans who had a high degree of combat exposure (i.e. participated in combat and/or were wounded) (Helzer, Robins, & McEvoy, 1986). In addition, research findings report that 20% of the sample of high combat exposure veterans meet the full criteria of the DSM-III diagnosis of PTSD (Helzer, et al., 1986). Thirty percent of the low-combat veterans in Helzer, et al.'s (1986) study demonstrated partial PTSD symptoms, while only 4% evidenced full PTSD diagnostic symptoms. Clinical samples from a VA study demonstrated that just over 70% of the high-combat exposed veterans met the full DSM-III PTSD diagnostic criteria, while 30% of the low combat-exposed veterans met the criteria for PTSD (Foy, Resnick, Sipprelle, & Carroll, 1987). Other estimates of the prevalence of PTSD in Vietnam veterans report that 20-50% of the 2.8 million veterans of war report symptoms which are consistent with a diagnosis of PTSD (Center for Policy Research, 1979; Figley, 1978). Based on these statistics, it is evident that PTSD is often part of the clinical presentation among this population.

PTSD symptoms have been identified in many survivors of the Nazi concentration camps (Antonovsky & Maoz, 1971; Hoppe, 1971; Chodoff, 1963). After reviewing this literature, one may conclude that all individuals experiencing this extreme degree of trauma/victimization, without the hope of change, are vulnerable to the development of PTSD. This appears to support the "threshold" for stress vulnerability described by Foy et al.

(1987) in the PTSD literature pertaining to combat veterans, which postulates that under extremely high levels of trauma/stress, the role of premorbidity becomes virtually insignificant in the development of PTSD symptomology.

An examination of the recent research on trauma victims demonstrates evidence that many rape victims and victims of violent crimes meet the DSM III-R (APA, 1987) diagnostic criteria for PTSD (Kilpatrick, Veronen,& Best, 1985; Steketee & Foa, 1987; Burge, 1988; Kilpatrick & Veronen, 1984a; Nadelson et al., 1982; Kilpatrick, Veronen, & Resick, 1981). Empirical studies which have focused on the relationship between the time since the trauma and the severity of symptoms have generally shown that symptoms in rape victims decrease in severity over time (Kilpatrick & Veronen, 1984b; Sales et al., 1984).

Support for the positive correlation between the degree of physical contact/severity of violence and the degree of post-assault symptoms is provided by empirical data which demonstrates that victims of a completed rape consistently have been found to have the greatest degree of psychological disturbance compared to all other crime victims (Resick, 1987; Kilpatrick, Saunders, Amick-McMullan, Best, Veronen & Resick, 1989). In addition, those individuals who experienced particularly brutal/more potentially lethal rapes were more likely to experience long term symptomolgy (Kilpatrick, et al.,1989), psychosomatic symptoms (Norris & Feldman-Summers, 1981), and mood state disturbances (Ellis, Atkeson, & Calhoun, 1981).

Some researchers have made distinctions between the degree of physical injury/actual violence and the subjective degree of threat perceived by the victim during or after the trauma. One empirical study has shown that in the immediate post-rape period, the victim's perception of a high degree of lethality/threats of death during the assault was strongly associated with the degree of symptom severity (Sales et al., 1984). The results of the study suggest that the degree of threat perceived by the victim may be as significant in effecting degree of post-trauma symptoms as the actual violence in the assault. Therefore, in the absence of severe physical violence, cues may be present in the situation (i.e. presence of a weapon, verbal threats if death/severe injury) which create high levels of perceived danger, and result in a greater degree of traumatization (Sales et al., 1984).

Kilpatrick et al. (1989) found that significant differences existed between crime victims who developed PTSD and crime victims who did not. PTSD-crime victims were significantly different from the nonPTSD-crime victims in the prevalence of (a) having sustained a physical injury during the crime (b) having experienced a completed rape, and (c) having perceived a life threat during the crime. Victims who's crime history included all three elements were 8.5 times more likely to have developed PTSD than those with none of the three elements (Kilpatrick et al., 1989). Other research studies examining factors influencing the development of PTSD symptomolgy in crime victims, provide similar evidence that the degree of physical

injury sustained during the criminal victimization, and the level of threat of serious harm perceived by the victim, are factors which appear to be related to the development of PTSD (Keane, 1985; Wirtz & Harrell, 1987).

One additional variable of interest in the current literature on post-trauma responses of rape victims and victims of violent crimes is the degree of social support available to the victim following the assault. The vast majority of studies studies have shown that social support tends to lessen the immediate impact of the trauma and tends to enhance the recovery process of both short, and long term symptoms (Burgess & Holmstrom, 1978; Ruch & Chandler, 1983: Norris & Feldman-Summers, 1981).

Battered Women

As described in the preceding section, victims of rape and violent crimes often demonstrate post-trauma symptoms which meet the DSM III-R criteria for PTSD. PTSD is also prevalent as part of the post-traumatic response of battered women (Walker, 1984). PTSD symptoms in battered women are demonstrated in the form of intrusive recollections of the assault, nightmares, and a heightened sense of anxiety and fear that the violence will recur (Walker, 1984). Unlike most other trauma victims, the trauma experienced by the battered women is often an ongoing process, rather than one single trauma (i.e. as in most rape victims). As a result, the fear of future violence tends to be an unending threat which is capable of maintaining high levels of anxiety and feelings of terror (Hilberman, 1980; Hilberman & Munson, 1978).

Another aspect of PTSD symptomolgy evident in battered women are symptoms of blunted affect, numbed responsiveness, and a reduction in social involvement (Douglas, 1986). Battered women also tend to demonstrate symptoms of hyperarousal including sleeping difficulties, a heightened startle reaction, concentration difficulties, and acute anxiety reactions to cues resembling the battering experience (Douglas, 1986). Because of the uncontrollable and often, unpredictable nature of this traumatic event, an individual often develops a belief system in which their perception of self-efficacy is diminished and a sense of being controlled by external forces tends to develop. This may be conceptualized as a form of learned helplessness and is often a feature which accompanies PTSD symptomolgy (Seligman, 1974). With learned helplessness, an individual's cognitive attributional style demonstrates a belief system in which they do not perceive themselves to be in control of their environment or destiny. Within this attributional style, the causality of events are attributed to an external locus of control. As a result, there are often motivational deficits which tend to result in the loss of the ability to initiate adaptive responses and a passive attitude may develop regarding their ability to avoid additional threats from their environment (Seligman & Garber, 1980).

Researchers in the area of domestic violence have referred to the collection of symptoms frequently experienced by battered females as "the battered woman's syndrome" (Walker, 1984; Douglas, 1986; Parker & Schumacher, 1977). The indicators of battered woman's syndrome consists of three major categories:

(1) The traumatic effects of victimization by the violence

(2) Learned helplessness deficits which develop from the repeated experience of victimization by the violence and the interaction between this victimization, and the battered woman's, and others, reactions to it.

(3) The presence of self-defeating responses by the victim in an attempt to cope with the violence (Douglas, 1986).

Relatively little empirical data exists in the literature which discusses factors related to the battered woman's propensity to experience mild versus severe symptoms in response to the assault. Some researchers have suggested that a victim's propensity for developing more extensive degrees of symptomolgy (i.e. battered woman's syndrome), may be associated with the victimization/traumatic experiences prior to the current abusive relationship, as well as, to the current beliefs/attitudes of the individual at the time of the violence (Douglas, 1986). Prior experiences such as violence in the family of origin, childhood or adolescent rape experiences, former abusive relationships, are all postulated to increase one's vulnerability to developing battered women's syndrome (Douglas, 1986).

Despite the occurrence of PTSD in battered women, it appears that the vast majority of literature addressing the susceptibility factors for symptom severity in battered women, have focused on the battered women's syndrome, as well as, a variety of other measures of symptomolgy, but not PTSD.

In the present study an interactive conceptual model was utilized in an attempt examine variables which contribute to, and influence, the development of PTSD in battered women. As described in the literature review, there is much support for an interactive psychosocial model for conceptualizing variations in victim's responses to trauma (Vander Kolk, 1987; Green, Wilson & Lindy, 1985; Kilpatrick et al., 1985; Figley, 1985). This model considers the individual's response to trauma as being the product of the interaction between factors related to the characteristics of the individual prior to the trauma, the nature and severity of the trauma itself, and factors related to the post-trauma environment.

The focus of the study examined pre-trauma victims characteristics (i.e. history of violence and demographic variables), individual cognitive styles (i.e. attributional styles, appraisal/perception of lethality), and violence related variables (i.e. severity of violence, degree of physical injury, sexual assault, threats of death, use of a lethal weapon). The following research questions have been addressed in this study; (1) What is the prevalence of the development of PTSD among battered women? (2) What variables differentiate PTSD-positive battered women from PTSD-negative battered women in terms of (a) history of abuse, (b) severity of current abuse, and (c) cognitive variables. (3) What is the amount of variance in PTSD score explained by the contribution of the violence-related variables (a) degree of physical injury, (b) perception of the existence of a high degree of lethality, and (c) the occurrence forced sexual activity, in addition to, physical assault?

Method

Subjects

The subjects for the current study included 106 women who were treated at an outpatient mental health center serving domestic violence batterers and victims of all sociodemographic classes. All of the subjects in the present study have experienced violence in their current relationship. Data for the current study was collected as part of a standard assessment protocol completed at the time of intake. The sample consisted of those women who have completed each of the instruments used in the present study: the Attribution Questionnaire, the Appraisal of Violence Scale, the Structured Intake Interview, and the Symptom Checklist 90-R (Derogatis, 1977).

Measures

The Attribution Questionnaire. This a six-item questionnaire developed specifically for this program, which describes beliefs about the cause of the violence, the ability to stop future violence, and beliefs about the occurrence of violence in the future, rated on a continuum of 1 through 7. Subjects'responses to test items assess both "internal versus external" attributions for the cause of the violence, and the "stability" of the cause.

The Appraisal of Violence Scale. This is a five-item questionnaire also developed specifically for this program, which contains items describing the beliefs about the severity of the violence, self-efficacy for stopping future violence, and beliefs concerning the likelihood that the effects of the violence could be lethal. Responses to each item are rated on a continuum of zero through three.

Structured Intake Interview. The intake session utilized a structured interview to attain demographic/background data, including a family genogram, history of violence within their family of origin, history of physical or sexual abuse during their childhood, history of victimizations or rape, relationship history, history of violence within current and prior relationships, and the severity of physical injuries from the violence. The variable "injury" was broken down into categories of "moderate" and "severe" degrees of injury. Moderate injury was operationally defined by including the following items: lost hair, cuts or burns, splinters, or bruises. Severe injury was defined by the items black eye, lost teeth, broken eardrum, joint or spinal injury, broken bones, concussion, internal injury, severe bruises, severe cuts or burns, and/or required medical treatment.

The Derogatis Symptom Checklist 90-revised (SCL-90-R) (Derogatis, 1977). This is a 90-item self-report inventory constructed to assess psychological symptoms in psychiatric and medical patients. Subjects are asked to rate the degree of discomfort present for each item on a 5-point scale of intensity (ranging from "not at all" to "extremely"). The SCL-90-R is composed of nine primary symptom dimensions and three global indices of distress. Test-retest reliability and internal consistency measures for the nine factors demonstrate alpha coefficients ranging from .77 to .90, and test-retest values ranging from .78 to .90 with one week intervals between tests (Derogatis, 1977).

The SCL-90-R data was utilized according to the technique described by Saunders, Arata, & Kilpatrick (1990). Saunders et al. (1990) have devised a 28-item scale within the SCL-90-R that has been shown to successfully discriminate between crime-related PTSD positive and PTSD negative respondents. Discriminant function analysis indicated that using a clinical cut-off score of 0.89 or above as the criterion for PTSD positive would maximize the classification ability of the scale's summary score.

Procedure

In this study, the diagnosis of PTSD was established using the PTSD subscale score derived from the SCL-90-R (Saunders, et al., 1990). Using this procedure, a summary score of less than 0.89 was considered to be indicative a PTSD-negative diagnosis.

Having established the PTSD and the NonPTSD groups, the groups were compared to identify group characteristics based on the following categories of variables;

Demographic Characteristics. These variables include age, marital status, current living arrangement, education level, family income, ethnicity, and religious affiliation.

Prior History of Violence. These variables include physical violence present between parents, physical abuse during childhood, sexual abuse during childhood, prior sexual victimization during adulthood, prior physical victimization during adulthood.

Severity of Current Violence. These variables include the severity of injury, presence of death threats from partner, forced sexual activity by partner, use of a lethal weapon by partner (gun, knife, motor vehicle).

Cognitions Concerning the Violence. These variables included attributions concerning responsibility/blame for the violence, attributions for the stability of the cause of the violence, the appraisal of the severity of the partner's violence, and the appraisal of the degree of lethality from the violence.

Results

Frequency of PTSD

Using a cutoof score of .89 on the SCL-90-R PTSD subscale (Saunders, et al., 1990), 64 (60%) of the 106 subjects were classified as PTSD-positive. Forty-two participants (40%) had scores below .89, indicating a PTSD-negative classification.

Demographic Characteristics

A Chi-square analysis of the demographic data demonstrated that there were no significant differences between the PTSD and nonPTSD group members in terms of age, marital status, current living arrangement, educational level, family income level, ethnicity, or religious affiliation. As a group, most of the participants were white, married, and residing with a partner. Most of the participants had at least a high school education and an annual family income of less than $35,000 (See Table A-1).

Prior History of Violence

The occurrence of physical abuse during childhood was reported by 63% of the PTSD group as compared to a statistically different 36% of the nonPTSD group. The presence of sexual abuse during childhood was reported by 41% of the PTSD group members, compared to 27% of the nonPTSD group members. Though not statistically significant on this measure, results suggest a difference between groups in the predicted direction (See Table B-2).

Severity of Current Violence

Chi-square analysis of the data from the structured interview revealed that a greater prevalence of forced sexual activity by the abusive partner was present in the PTSD group. Forty-seven percent of the PTSD group as compared to 27% of the nonPTSD group reported that forced sexual activity from their partner occurred on at least one occasion. The PTSD group also differed from the nonPTSD group in regard to the use of a motor vehicle to threaten or harm during the violence. This was reported by 40% of the PTSD group and 21% of the nonPTSD group.

Further Chi-square analyses showed that PTSD and nonPTSD groups were not significantly different on other measures of severity of current violence. In all cases, however, differences were in the direction of a greater number of participants with the greatest severity of violence belonging to the PTSD group (See Table C-3).

Cognitions Concerning the Violence

The data from the Attribution Questionnaire was analyzed by a series of one-tailed T-tests which demonstrated that the PTSD and nonPTSD groups were similar in terms of both their internal/external attributions regarding the responsibility/blame for the violence and the attribution of stability of the cause of violence in their abusive relationship. For both groups the violence was attributed more often to their partners rather than to themselves.

An analysis of the data from the Appraisal of Violence Scale using one-tailed T-tests demonstrated a statistically significant difference (t=1.67, df=77, p=.05) between the groups in terms of the appraisal of the degree of lethality that was present during the violence (PTSD group = 2.15, SD =.70 n=46; nonPTSD group= 1.88, SD =.74 n=33). The PTSD group demonstrated a belief in a greater likelihood of the violence becoming lethal in the future compared to the nonPTSD group. No significant differences were found for perceptions of the degree of severity of their partner's violence during the occurrence of past violent incidents (See Table D-4).

Multiple Regression

In an attempt to identify the amount of variance accounted for by the variables previously hypothesized as related to PTSD, hierarchical multiple regression analysis was performed using as predictors those four variables which were found to be significantly different between the two groups (i.e. physical abuse during childhood, appraisal of the lethality of violence, forced sexual activity by partner, and use of motor vehicle by partner to threaten/cause harm). The first variable entered into the equation ("physical abuse as a child") accounted for the majority of the variance in group membership (15%); the remaining three variables only accounted for an additional 3% of the overall variance. The decision to enter the "childhood physical abuse" variable into the multiple regression analysis equation first was based on the rationale of remaining consistent with the order of occurrence of these variables. In terms of the

chronology, childhood physical abuse was a premorbid variable, while the other three variables were all associated with the current trauma (See Table E-5). Intercorrelations between the predictor variables may be found in Table E-6.

Discussion

This study was designed to provide a better understanding of the frequency of occurrence of PTSD in battered women and to determine to what degree the occurrence of PTSD in battered women could be explained by a set of variables associated with the individual's victimization history and violence related variables.

Frequency of PTSD

The results indicate that 60% of the participants were PTSD-positive. These results appear to support the applicability of a PTSD diagnosis for battered women and suggests that these symptoms may be considered as a central component of the emotional aftermath experienced subsequent to physical and/or sexual battering, rather than conceptualized as a rare exception to the rule. The frequency of PTSD at 60% in the sample may be a conservative estimate of the actual rate of occurrence due to the fact that the time since assault was not controlled for. Thus, these results may represent an under-estimate because some participants who were classified as PTSD-negative at the time of the assessment may have been PTSD-positive at a previous point in time.

Demographics

Demographic variables did not differentiate PTSD from nonPTSD group membership. These findings are consistent with prior research studies which did not find a significant relationship between demographic characteristics and post-trauma responses in rape victims (Kilpatrick, Veronen, & Best, 1985), crime victims (Kilpatrick et al., 1989), and Vietnam combat veterans (Foy et al., 1984; Foy et al., 1987; Solkoff et al., 1986).

Prior History of Violence

An examination of the subjects' prior experiences with violence included measures that represented aspects of the family of origin environment during their developmental years and experiences of victimization/abuse as an adult prior to their current relationship. The variable "physical abuse during childhood" was significant in differentiating PTSD from nonPTSD battered women in the study. The greater prevalence of childhood physical abuse in the PTSD group is consistent with previous research studies which describe the contribution of a dysfunctional early family environment (Sales et al., 1984) and the negative impact of childhood trauma (Horowitz, 1979; Wilson, et al., 1985; Vander Kolk, 1987; Krugman, 1987) on subsequent personality functioning and vulnerability to trauma. The results of the study add further support to the theoretical conceptualization that childhood experiences of physical trauma/abuse tend to result in a compromised capacity for coping with subsequent traumas. One may also speculate, that traumatic events which are similar to the early trauma (i.e. physical

abuse), may provide greater degrees of post-trauma symptomology because of the potential for current traumatic stimuli to stimulate unresolved traumatic experiences. As suggested by Horowitz (1979), until an individual successfully integrates prior traumatic experiences into the existing self structure, they will be experience a cycle of intrusive imagery and related affect, with periods of affective numbing. One may hypothesize that subsequent trauma would significantly tax current defense mechanisms and require these additional traumatic experiences to be integrated by the individual. This may stimulate affect associated with earlier traumas resulting in high degrees of symptomolgy. Scrignar (1984) hypothesized that the degree of ANS arousal and the resulting PTSD symptomolgy was highly influenced by the individual's subjective meaning/perception of the traumatic event. This models asserts that cognitive activity of replaying or visualizing past traumatic events can be stimulated by a current trauma. One may hypothesized that the degree to which the current experience symbolizes a re-enactment of prior traumas may be positively correlated with the current severity of post-trauma symptomology.

Severity of Current Violence

The similarity between the two groups in terms of the degree of bodily injury suffered from the violence is inconsistent with prior studies which have correlated more severe post-trauma symptomolgy with greater degrees of physical injury in combat veterans (Keane et al., 1985; Solkoff et al., 1986), rape victims (Sales et al., 1984; Kilpatrick et al., 1989), and victims of violent crimes (Keane, 1985; Flynn, 1986; Wirtz &

Harrell, 1987; Kilpatrick et al., 1989). However, these findings appear to be consistent with Solkoff et al.'s (1986) study in which individuals who experienced the same degree of trauma exhibited varying degrees of post-trauma symptomolgy. This suggests that it is not just the severity of the injury that contributes to the development of PTSD symptomology, but also the subjective meaning of the traumatic event (Horowitz, 1979; Gleser, et al., 1981; Scrignar, 1984). For example, the violent incidents may represent something very different for an individual who has experienced childhood violence as compared to someone who has not. For the individual who has been abused previously, the current violence may stimulate earlier memories and precipitate intrusive imagery associated with the prior trauma. Individuals for whom violence is symbolic of earlier traumas in their life may form conclusions about the meaning of the violence leading to a greater detrimental impact on their emotional functioning, regardless of the severity of their current injury.

A comprehensive examination of the severity of the battering trauma should include the characteristics of the violent event itself, in addition to the severity of actual bodily injury experienced due to the violence. In this study, an examination of the variables related to the characteristics of the violence itself, focused on three aspects. These included the presence of death-threats, the use of a lethal weapon by the assailant, and the presence or absence of sexual assault.

The results of the study provided evidence for a trend in which PTSD battered women experienced more violent incidents that were characterized by the occurrence of sexual assault and the threat/use of a lethal weapon (e.g. motor vehicle). This is consistent with the proposed hypothesis in this study, as well as, supported by prior research which has identified victims who have experienced a sexual assault as demonstrating the greatest degree of post-assault symptomology in comparison to victims of crimes or assaults which did not have a sexual component to the assault (Resick, 1987; Kilpatrick et al., 1989). Therefore, the somewhat greater occurrence of forced sexual activity experienced by the PTSD group appears to suggest a possible relationship between the experience of sexual assault and the development of PTSD in battered women.

These findings are also consistent with the conceptual model which asserts that the degree of "violation of the self" experienced by the victim is proportional to the severity of post-trauma symptoms which are experienced (Bard & Sangrey, 1980). One may propose that sexual assault by one's partner is, perhaps, one of the most serious types of violation of the self that a battered women may encounter. This form of assault can be conceptualized as violating one of the basic mores' of any relationship, the right to be in control of one's body, as well as, converting what was once a symbolic act of one's love, into an act of control, manipulation, and abuse.

The "use of a motor vehicle' was the only form of a "lethal weapon" assessed in this study which indicated a statistically significant difference between the groups. Although the use of

other types of lethal weapons assessed were not statistically different, between the nonPTSD and PTSD groups, the PTSD group did demonstrate a greater frequency of use of a knife by their partner (22% vs. 12%), and the use of a gun by their partner (17% vs. 12%). Taken together, these findings may be conceptualized as being consistent with prior research that the "degree of life threat" perceived to be present during the trauma is positively correlated with the severity of post-trauma symptomology (Gleser et al., 1981). However, although associated with the presence of PTSD, the use of a lethal weapon during the violence appears not to be an essential element for for predicting the occurrence of PTSD in battered women. Perhaps this is because a high degree of lethality is not solely dependent on the presence of a weapon alone. The use of a fist by the male assailant may represent the same degree of life threat as provided by the use of a weapon. Future research should take this into account.

Cognitive Variables

The greater degree of lethality perceived to be present by the PTSD group suggests that the subjective appraisal of the degree of personal threat present during the trauma provides a significant contribution to the degree of PTSD symptomolgy in battered women. These findings are consistent with the hypothesis of the study and previous theoretical models (Scrignar, 1984), as well as, supported by empirical research with trauma victims (Lazarus et al., 1974; Gleser et al., 1981), combat veterans (Keane, 1985; Wilson & Krauss, 1985), rape victims (Sales et al.,1984), crime victims (Kilpatrick et al., 1989). One way to

conceptualize the role played by cognitions (i.e. appraisal of life threat) in the development of PTSD is consistent with Scrignar's (1984) model. Cognitions which indicate the presence high degrees of threat to one's safety provide the greatest degree of impact on ANS functioning. This would account for the greater degree of lethality appraised to be present by the PTSD group battered women. In addition, the impact of an event which was perceived to be life threatening may also be intensified by the tendency for intrusive thoughts and imagery to elicit episodes of heightened anxiety. This process may contribute to the chronicity of PTSD symptomolgy.

The two groups were similar in their beliefs about the responsibility/blame for the violence and the stability of the violence. The findings are contrary to the hypothesis of the study and prior research which reports that greater degrees of impact result from negative events when individuals maintain internal and stable attributions about the event. The results concerning the tendency for "self-blame" for the violence indicates that both groups perceive themselves to be about 50% responsible for the violence as indicated by a mean score of approximately 3.0 on a scale of 1 through 7.

The two groups were also similar in their appraisal of the severity of the actual violence that occurred. Both of the groups rated the severity of the actual violence to be in the severe category. Thus, homogeneity of variance on this variable may account for the failure to detect differences between the groups. Nevertheless, appraisal of the actual severity of violence may not be as significant as the beliefs/appraisals of the degree of

lethality which is perceived to be present by the victim. One may speculate that despite the perception that a severe degree of injury was experienced in both groups, it is the degree of life-threat perceived by the individual that has the potential for eliciting greater degrees of post-trauma symptomology.

In a previous study comparing PTSD-positive and PTSD-negative crime victims, Kilpatrick et al. (1989) found that significant differences existed between the groups with PTSD-positive crime victims having a greater prevalence of (a) physical injury, (b) completed rape, and (c) the perception life-threat during the violence. The Kilpatrick et al. (1989) study did not examine variables related to childhood or adolescent trauma, therefore, the significance of the current findings, related to the childhood physical abuse variable, is not directly comparable with the Kilpatrick et al. (1989) study. However, variables which focused on measures of the current trauma were somewhat consistent with the Kilpatrick et al. (1989) findings, as we found that the PTSD group battered women had a greater prevalence of rape/forced sexual activity, the perception of life threat (i.e. appraisal of a high degree of lethality), and a greater prevalence of the use of a lethal weapon (i.e. motor vehicle), during the violence suggesting that these variables were related to the presence of PTSD in battered women.

Multiple regression analysis combining all four significant variables (i.e. childhood physical abuse, perceived lethality of violence, forced sexual activity, and lethal weapon/motor vehicle present during violence) demonstrated that childhood physical

abuse accounted for the majority of the variance (R = .15) and the other three variables did not add significantly to this (R =.18, Mult.R =.42, p = .087). The results would seem to indicate that although all four variables represent measures for which there are significant differences between the groups, the first variable is now demonstrated to be the most predictive of PTSD in battered women. The other three variables did not provide additional predictive information concerning the presence or absence of PTSD symptomology in the participants. Low correlation coefficients between the variables minimize the possibility that the lack of additional variance provided by the additional three variables could be due to the variables being highly correlated and thus, accounting for the same variance.

Limitations

As a result of the reliance on archival data, several methodological limitations are evident in the current study. In future studies it would be useful to control for the length of time since the most recent violent incident. This control would help to reduce the degree of error contributed by the reduction of symptomolgy that may occur over an extended period of time. Future research may want to include only subjects with a relatively short duration of time since the most recent assault (e.g. between 30 to 90 days post-assault) in order to reduce the confounding error presented by a participant who did meet the criteria of PTSD at one point in time, but failed to meet the PTSD criteria at the time of assessment. A second consideration for future research would be to consider alternate measures for assessment of the degree of bodily injury experienced from the

violence. The categorization of "moderate" and "severe" categories of injury in the study may have provided some degree of error in accurately assessing this variable because the cutoff point between these two categories is somewhat arbitrary. Participants who are in the "borderline" area between these two categories may be categorized as having different degrees of injury, when in actuality, they may be more alike than different. More stringent methods of classifying the degree of injury from the violence may increase the validity of future studies. A third area of limitation in the current research design is the reliance on the self-report method of obtaining data. Although some of the relevant data can only be obtained through the self-report method (e.g. the cognitive variables), the reliance on self-reported data reduces the validity of the measures from which the etiological factors are derived and does not allow for control over distortions by the subjects. Fourth, in the current study all of the participants were battered women exposed to violence and seeking help in a mental health facility. The use of a sample that was highly homogeneous probably reduced the amount of variance that could be identified in the measures examined. Finally, it should be noted that the distribution of demographic variables does not adequately represent the general population and therefore, restricts generalizations from this study to overall population.

Appendix A

Table 1

Demographic Characteristics

	PTSD (n=106)	nonPTSD (n=106)
Mean Age	36.2 years	38.8 years
Marital Status	(n=79)	(n=79)
Married	68.1%	68.8%
Separated	6.4%	15.6%
Single	26.5%	15.6%
Current Living Arrangement	(n=78)	(n=78)
Residing with partner	63.0%	71.9%
Temporarily without partner	10.9%	12.5%
Permanently without partner	27%	15.6%
Education Level	(n=77)	(n=77)
Below High School	20.0%	15.6%
High School Graduate	55.6%	59.4%
College Graduate	24.4%	25.0%
Family Income	(n=73)	(n=73)
$10,000 or below	32%	46%
$10,000 to $35,000	56%	54%
$35,000 or above	12%	0%
Ethnicity	(n=80)	(n=80)
White	87.2%	81.8%
Black	4.3%	12.1%
Other	8.5%	6.1%
Religious Affiliation	(n=80)	(n=80)
Catholic	38%	31%
Protestant	28%	24%
Jewish	17%	21%

Note. Total n varies for each measure due to missing data.

Appendix B

Table 2

Percentage of PTSD and nonPTSD Participants with Prior History of Violence

	PTSD	nonPTSD
Physical violence present between parents		
YES	(n=20) 42.6%	(n=10) 32.3%
NO	(n=27) 57.4%	(n=21) 67.7%
Physical Abuse during childhood (a)		
YES	(n=24) 63.2%	(n=9) 36.0%
NO	(n=14) 36.8%	(n=16) 64.0%
Sexual Abuse during childhood		
YES	(n=19) 41.3%	(n=9) 27.3%
NO	(n=27) 58.7%	(n=24) 72.7%
Prior Victimization during adulthood (sexual abuse)		
YES	(n=14) 30.4%	(n=8) 24.2%
NO	(n=32) 69.6%	(n=25) 75.8%
Prior Victimization during adulthood (physical abuse)		
YES	(n=12) 27.3%	(n=5) 16.7%
NO	(n=32) 72.7%	(n=25) 83.3%

(a) $\chi^2 = 4.46$, $p < .05$

Note. Total n for each measure varies due to missing data.

Appendix C

Table 3

Severity of Current Violence

	PTSD	nonPTSD
Severity of Injury		
None to Moderate	(n=10) 22.2%	(n=10) 30.3%
Severe	(n=35) 77.8%	(n=23) 69.7%
Presence of death-threats from partner		
NO	(n=12) 26.7%	(n=14) 42.4%
YES	(n=33) 73.3%	(n=19) 57.6%
Forced sexual activity by partner (a)		
NO	(n=25) 53.2%	(n=24) 72.7%
YES	(n=22) 46.8%	(n=9) 27.3%
Use of lethal weapon by partner		
(Gun)		
NO	(n=38) 82.6%	(n=29) 87.9%
YES	(n=8) 17.4%	(n=4) 12.1%
(Knife)		
NO	(n=36) 78.3%	(n=29) 87.9%
YES	(n=10) 21.7%	(n=4) 12.1%
(Motor Vehicle) (b)		
NO	(n=27) 60.0%	(n=26) 78.8%
YES	(n=18) 40.0%	(n=7) 21.2%

(a) $X^2 = 3.12$, $p < .10$
(b) $X^2 = 3.09$, $p < .10$
Note. Total n varies for each measure due to missing data.

Appendix D

Table 4

Cognitive Variables

	Number of Cases	Mean	Standard Deviation	T-Value	Degrees of Freedom	1-Tail Prob.
Attributions Concerning the Violence: (a) from Attribution for Violence Questionnaire						
(Internal versus External Attributions)						
PTSD	50	3.16	1.87	.83	84	.21
NonPTSD	36	2.83	1.68	.83	84	.21
	*86					
(Stability of Attributions)						
PTSD	48	4.19	2.33	.13	79	.45
NONPTSD	33	4.12	2.25	.13	79	.45
	*81					
Victim's Appraisal of the Violence (b) from Appraisal of Violence Scale						
(Appraisal of Sevreity of Partner's Violence)						
PTSD	48	2.38	.70	.79	82	.22
NONPTSD	36	2.25	.73	.79	82	.22
	*84					
(Appraisal of Degree of Lethality from Violence) (c)						
PTSD	46	2.15	.70	1.67	77	.049
NONPTSD	33	1.88	.74	1.67	77	.049
	*79					

(a) Scores range from 1-7. For internal vs. external attributions, a score of 1 indicates "violence totally due to partner", and a score of 7 indicates "violence totally due to me".
For attributions of stability of cause of violence, a score of 1 indicates "will never be present again", and a score Of 7 indicates "will always be present".

(b) Scores range from 1-3. For appraisal of severity, a score of 1 indicates "mild", and a score of 3 indicates "severe".
For appraisal of lethality, a score of 1 indicates "lethality not at all likely", and a score of 3 indicates "lethality is very likely".

(c) $p \leq .05$

Note. Total n varies for each measure due to missing data.

Appendix E

Table 5

Multiple Regression Analysis

Variable	Step	N	MultR.	Rsq.	F.Eqn	SigF.	RsqCh.	FCh.	SigCh.
"Phys.Abuse Childhood"	1	(63)	.384	.147	7.59	.009	.147	7.59	.009
"Appraisal of Lethality"	2	(79)	.384	.147	3.71	.033	.000	0.01	.920
"Forced Sex by Partner"	3	(80)	.420	.176	2.99	.042	.029	1.47	.232
"Motor Veh. Used to Harm"	4	(78)	.420	.176	2.19	.087	.000	.004	.953

Note. Total n for eash measure varies due to missing data.

Table 6

Pearson Correlation Coefficients

	Phys.Abuse Childhood	Appraisal of Lethality	Motor Veh. to Abuse	Forced Sexual Activity/Partner
Phys.Abuse Childhood	1.0000 P=.000	.1136 P=.221	.0355 P=.393	.2342 P=.033
Appraisal of Lethality		1.000 P=.000	.1572 P=.111	.0624 P=.314
Motor Vehicle to Abuse			1.000 P=.000	.2675 P=.009
Partner Forced Sexual Activity				1.000 P=.000

Note. Total n for each measure varies due to missing data.

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